

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A ~~video/audio~~ video signal processing method for processing ~~supplied video/audio~~ video signals containing video material by a server, the server executing instructions to perform the method comprising the ~~steps of:~~
 - ~~describing transcoding target bitstream parameters;~~
 - ~~extracting transcoding hints metadata;~~
 - ~~storing the transcoding hints metadata;~~
 - ~~separating A/V~~ video material from the video signals into segments, the video material comprising a plurality of frames;
 - calculating a number of new feature points per frame of the video material;
 - determining, for each segment, whether the number of new feature points exceeds a threshold value;
 - selecting, based on the determination, one of a plurality of transcoding hints states; and
 - ~~associating the transcoding hints metadata to the separated A/V segments; and~~
 - transcoding the A/V video material according to the selected one of a plurality of transcoding hints states.

2. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim [[1]] 66, wherein the step of describing the transcoding target bitstream parameters comprises the steps of:

- defining a bit rate of a second bitstream of compressed images;
- defining a size of pictures of the second bitstream of compressed images;
- defining a number of frames per second of the second bitstream of compressed images;
- defining an aspect ratio of a pel of the second bitstream of compressed images;
- defining a color depth of each of the pel of the second bitstream of compressed images;
- defining whether progressive format is used for the second bitstream of compressed images;
- defining whether interlaced format is used for the second bitstream of compressed images;
- defining whether frame pictures are used for the second bitstream of compressed images;
- defining whether ~~hold~~ field pictures are used for the second bitstream of compressed images; and
- defining a compression method of the second bitstream of compressed images.

3. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 2, wherein the step of describing the transcoding target bitstream

parameters further comprises the step of defining employed compression standards as defined by MPEG (Moving Pictures Expert Group).

4. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 2, wherein the step of describing the transcoding target bitstream parameters further comprises the step of defining employed compression standards as defined by ITU-T (International Telecommunications Union Technical Standards Group).

5. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim [[1]] 66, wherein the step of extracting the transcoding hints metadata comprises the steps of:

receiving a first bitstream of compressed image data having a first GOP structure;

obtaining first motion information from the first bitstream;

obtaining texture/edge information of a first segmentation;

obtaining feature points and associated motion information from the first bitstream; and

obtaining region of interest information from the first bitstream.

6. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 5, wherein the step of extracting the transcoding hints metadata further comprises the step of storing the first motion information as transcoding hints metadata.

7. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 5, wherein the step of extracting the transcoding hints metadata further comprises the step of representing motion-related transcoding hints metadata as parameters of a parametric motion model.

8. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 7, wherein the step of extracting the transcoding hints metadata further comprises the step of employing the parametric motion model to describe a global motion within subsequent rectangular video frames.

9. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 7, wherein the step of extracting the transcoding hints metadata further comprises the step of employing the parametric motion model to describe a motion within a defined region of arbitrary shape.

10. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 9, wherein the parametric motion model is employed to describe the motion within the defined region of arbitrary shape as used within MPEG-4.

11. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 5, wherein the step of extracting the transcoding hints metadata further comprises the step of representing motion-related transcoding hints metadata as

an array of motion vectors contained in the first bitstream of the compressed image data.

12. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 5, wherein the step of extracting the transcoding hints metadata further comprises the step of representing motion-related transcoding hints metadata as an array of motion vectors derived from motion vectors contained in the first bitstream of the compressed image data.

13. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 5, wherein the step of extracting the transcoding hints metadata further comprises the step of representing motion-related transcoding hints metadata as a list of feature points with associated motion vectors, which are tracked within subsequent frames.

14. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 5, wherein the step of extracting the transcoding hints metadata further comprises the step of representing motion-related transcoding hints metadata as a list of feature points with associated motion vectors, which are tracked within arbitrarily shaped regions, within subsequent frames.

15. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 5, wherein the step of extracting the transcoding hints metadata

further comprises the step of representing texture-related transcoding hints metadata as one of a list of DCT-coefficients and a measure (one of mean, minimum, maximum, variance, and standard deviation) derived thereof.

16. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 5, wherein the step of extracting the transcoding hints metadata further comprises the step of representing edge-related transcoding hints metadata as one of a list of DCT-coefficients and a measure ~~(one of mean, minimum, maximum, variance, and standard deviation)~~ derived thereof, the measure being one of mean, minimum, maximum, variance, or standard deviation.

17. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 5, wherein the step of extracting the transcoding hints metadata further comprises the step of representing the feature points and associated motion-related transcoding hints metadata as a list.

18. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 5, wherein the step of extracting the transcoding hints metadata further comprises the step of representing encoding-complexity-related transcoding hints metadata as a complexity metric derived from ~~a life-time list of~~ the feature points tracked within subsequent frames by using a number of lost and new feature points from one frame to a next frame.

19. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim [[1]] 66, wherein the step of storing the transcoding hints metadata comprises the step of maintaining a buffer containing transcoding hints metadata for several situations.

20. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 19, wherein the step of storing the transcoding hints metadata further comprises the step of storing individual general transcoding hints metadata for several target devices.

21. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 19, wherein the step of storing the transcoding hints metadata further comprises the step of storing general transcoding hints metadata for ~~AAV~~ video segments of varying scene activity.

22. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 1, wherein the step of separating the ~~AAV~~ video material into segments comprises the steps of:

using feature points with associated motion vectors;

tracking the feature points and ~~keeping a life time of feature points~~; and

determining a new ~~AAV~~ video segment for transcoding based on a number of the feature points that could not be tracked from one frame to a next frame.

23. (Canceled)

24. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 1, wherein the step of transcoding the ~~AV~~ video material comprises the steps of:

receiving a first bitstream of compressed image data having a first GOP structure;

extracting transcoding hints metadata from the first bitstream;

utilizing the transcoding hints metadata associated to the first bitstream to facilitate transcoding; and

outputting a second bitstream.

25. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 24, wherein the step of transcoding the ~~AV~~ video material further comprises the step of utilizing the transcoding hints metadata associated to temporal segments of the first bitstream to facilitate transcoding.

26. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 24, wherein the step of transcoding the ~~AV~~ video material further comprises the step of utilizing the transcoding hints metadata associated to spatial segments of the first bitstream to facilitate transcoding.

27. (Canceled)

28. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 24, wherein the step of transcoding the ~~AV~~ video material further comprises the step of controlling a bit rate of the second bitstream so that a bit rate of the first bitstream is different from the bit rate of the second bit stream.

29. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 28, wherein the step of transcoding the ~~AV~~ video material further comprises the step of adjusting a size of pictures represented by the first bitstream so that pictures represented by the second bitstream exhibits a size different from the size of the pictures represented by the first bitstream.

30. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 24, wherein the step of transcoding the ~~AV~~ video material further comprises the step of adjusting a size of pictures represented by the first bitstream so that pictures represented by the second bitstream exhibit a size different from the size of the pictures represented by the first bitstream.

31. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 30, wherein the step of transcoding the ~~AV~~ video material further comprises the step of encoding the pictures represented by the second bitstream as field pictures when the pictures represented by the first bitstream are encoded as frame pictures.

32. (Canceled)

33. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 30, wherein the step of transcoding the ~~AAV~~ video material further comprises the step of interlacing the pictures represented by the first bitstream when the pictures represented by the first bitstream are received as a progressive sequence so that the pictures represented by the second bitstream are output as an interlaced sequence.

34. (Canceled)

35. (Currently Amended) A ~~video/audio~~ video signal processing method according to claim 24, wherein the step of transcoding the ~~AAV~~ video material further comprises the step of encoding pictures represented by the second bitstream as field pictures when pictures represented by the first bitstream are encoded as frame pictures.

36. (Canceled)

37. (Currently Amended) A ~~video/audio~~ video signal-processing method according to claim 24, wherein the step of transcoding the ~~AAV~~ video material further comprises the step of interlacing pictures represented by the first bitstream when

pictures represented by the first bitstream are received as a progressive sequence so that pictures represented by the second bitstream are output as an interlaced sequence.

38-55. (Canceled)

56. (Currently Amended) An apparatus for processing supplied ~~video/audio~~ video signals, comprising:

~~a target buffer for storing at least one description of transcoding target bitstream-parameters;~~

~~an extraction unit for extracting transcoding hints metadata based on the at least one description;~~

~~a buffer for storing the transcoding hints metadata;~~

~~a segmenting unit for separating AA/ video material into segments, the video material comprising a plurality of frames;~~

~~a calculation unit for calculating a number of new features points per frame of the video material;~~

~~a determination unit for determining, for each segment, whether the number of new feature points exceeds a threshold value;~~

~~a selection unit for selecting, based on the determination, one of a plurality of transcoding hints states; and~~

~~a transcoding unit for associating the transcoding hints metadata to the separate AA/ segments and transcoding the AA/ video material according to the selected one of a plurality of transcoding hints states.~~

57-65. (Canceled)

66. (New) A video signal processing method according to claim 1, further comprising the steps of:

describing transcoding target bitstream parameters;

extracting transcoding hints metadata; and

storing the transcoding hints metadata.

67. (New) The apparatus of claim 56, further comprising:

a target buffer for storing at least one description of transcoding target bitstream parameters;

an extraction unit for extracting transcoding hints metadata based on the at least one description;

a buffer for storing the transcoding hints metadata.